

Abstract of the disclosure

745 An improved, polytetrafluoroethylene shaft sealing element, and a method to make the sealing
element: The improved element is characterized by being manufactured as one piece of a selected
polytetrafluoroethylene mixture (which is conventionally clamped in a conventional housing) that has
a strategically placed circumferential groove and that preferably has hydrodynamic grooves that end at
a selected distance from the toe end of the seal. Optionally, the improved seal may include a wiper lip
750 as part of the one piece of a polytetrafluoroethylene mixture. Alternatively, the improved element may
have the thickness of the part of the seal bearing on the shaft tapered in its thickness (not of uniform
thickness). Adjustment of these properties optimizes the pressure distribution of the part of the seal
that bears on the shaft with a resultant significant increase in the effective lifetime of the seal and
significant improvement in the effectiveness of the seal.